

WHAT IS CLAIMED IS:

1. A method of processing image data in which two images obtained by photographing an identical subject, a first image being of large pixel number and small channel number and a second image being of small pixel number and large channel number, are combined to create a third image of large pixel number and large channel number, said method comprising the steps of:

performing principal component analysis on the image data in a specified region including a point in said second image of small pixel number and large channel number which corresponds to a pixel of interest at a specified point in said first image of large pixel number and small channel number;

determining coefficients in linear sums so that said linear sums of a specified number of principal component vectors obtained by said principal component analysis render output values of said pixel of interest in said first image of large pixel number and small channel number; and

determining spectral information of said pixel of interest based on said coefficients to create said third image of large pixel number and large channel number.

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2. The method according to claim 1, wherein said first image of large pixel number and small channel number is an image that has been taken with a silver halide photographic camera and then captured with a scanner, and said second image of small pixel number and large channel number is an image captured with a low-resolution multi-band camera.

3. An apparatus for processing image data in which two images obtained by photographing an identical subject, a first image being of large pixel number and small channel number and a second image being of small pixel number and large channel number, are combined to create a third image of large pixel number and large channel number, said apparatus comprising:

means for performing principal component analysis on the image data in a specified region including a point in said second image of small pixel number and large channel number which corresponds to a pixel of interest at a specified point in said first image of large pixel number and small channel number;

means for determining coefficients in linear sums so that said linear sums of a specified number of principal component vectors obtained by said principal component

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analysis render output values of said pixel of interest in said first image of large pixel number and small channel number; and

means for determining spectral information of said pixel of interest based on said coefficients to create said third image of large pixel number and large channel number.

4. The apparatus according to claim 3, wherein said first image of large pixel number and small channel number is an image that has been taken with a silver halide photographic camera and then captured with a scanner, and said second image of small pixel number and large channel number is an image captured with a low-resolution multi-band camera.

5. A recording medium loaded with a program for executing a method of processing image data in which two images of an identical subject, a first image being of large pixel number and small channel number and a second image being of small pixel number and large channel number, are combined to create a third image of large pixel number and large channel number, said method comprising the steps of:

performing principal component analysis on the image

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determining coefficients in linear sums so that said linear sums of a specified number of principal component vectors obtained by said principal component analysis render output values of said pixel of interest in said first image of large pixel number and small channel number; and

determining spectral information of said pixel of interest based on said coefficients to create said third image of large pixel number and large channel number.

6. The recording medium according to claim 5, wherein said first image of large pixel number and small channel number is an image that has been taken with a silver halide photographic camera and then captured with a scanner, and said second image of small pixel number and large channel number is an image captured with a low-resolution multi-band camera.